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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/724,426	11/26/2003	Johnny Zhong	15436.135.1	1047

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EXAMINER
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WONG, ERIC K

ART UNIT	PAPER NUMBER
2883	

DATE MAILED: 12/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/724,426	<b>Applicant(s)</b> ZHONG ET AL.	
	<b>Examiner</b> Eric Wong	<b>Art Unit</b> 2883	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 September 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 6-11, 13-21, 23 and 24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 6-11, 13-21, 23 and 24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments filed 9/22/06 have been fully considered but they are not persuasive. In regards to the claim group 6-11 and 13-14, Applicant argues that the Examiner relies on little more than a single vague reference to Xu figures to support the rejection of claims 6-11 and 13-14. Applicant points out this vagueness with respect to the add/drop portions of the invention. Examiner respectfully disagrees. Examiner believes that while terse, the indication of figures is appropriate. As one of ordinary skill in the optical multiplexing or demultiplexing art would be able to determine, for example, in figure 19A, that an add/drop function is taking place.

If one was not able to see this clearly, column 4, lines 49-51 further define this figure to be “a block diagram of an **interleaver** performing an **add/drop** function...” (emphasis added).

If one was still unclear as to the function of the structure disclosed in figure 19A, column 13, lines 38-53 provide further detail as to how the interleaver functions as an add/drop module.

2. Applicant further argues as an example, assertion that channel isolation and suppressed crosstalk by the Examiner lacks evidence. Examiner respectfully disagrees. Again, one skilled in the art would recognize that an interleaver inherently would isolate channels and suppress crosstalk.

If one was not able to see this clearly, one could refer to figure 23 of the Xu reference where a description of a cascaded interleaver functions to suppress crosstalk. This suppression of crosstalk isolates channels.

3. Applicant further argues and recites a quote from MPEP706 noting that Examiner must cite and designate parts applicable to applicant's invention, **if not apparent** (emphasis added).

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As noted above, Examiner believes that it would be apparent to one of ordinary skill in the art and that one of ordinary skill in the art would be able to recognize from the figures alone and the brief description of the figures in Xu, the claimed features of applicant's invention.

4. Applicant further argues the basis of Examiner's motivation and use of the Laming reference, noting that Xu teaches away from the combination proposed by the Examiner.

Examiner respectfully disagrees. Xu discloses that fused fiber interleavers are well known.

5. Finally, Applicant argues that the combination of Xu and Laming teaches away from the combination proposed by Examiner. Examiner respectfully disagrees. Examiner thanks Applicant for pointing out multiple sections of the MPEP, but would like to direct Applicant to MPEP 2141.02, 2143.01 and 2145D. Prior art must be considered in its entirety, including disclosures that teach away from the claims.

6. As to Xu teaching away from the use of a fused fiber interleaver because of manufacturing difficulties, Laming teaches a fused fiber interleaver that does not appear to result in manufacturing difficulties. Examiner believes this provides proper motivation to use the teachings of Laming in the invention of Xu.

7. With regard to the arguments for claims 15-21 and 23-24, Examiner believes the rejection is not defective as set forth above.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 6-11 and 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent Number 6,871,022 to Xu, and further in view of United States Patent Number 6,278,818 to Laming et al.

Xu discloses in figures 6, 16A-B, and 19A-B, an optical add/drop module for adding or dropping one or more channels from a wavelength division multiplexed (WDM) signal, the optical add/drop module comprising:

- A drop portion comprising a plurality of thin film filters, wherein each thin film filter drops a particular channel from a WDM signal (dichroic thin film devices are disclosed);
- An add portion that adds channels of the WDM signal dropped by the drop portion back to the WDM signal, wherein the add portion comprises:
  - A first stage of interleavers; and
  - A final stage including a thin film interleaver, wherein the thin film interleaver has a flat-top frequency response (column 12, lines 9-26). Xu describes in figure 10 that a dichroic thin film device (1045).

As to claims 7-8, an add/drop module with a thin-film interferometer would inherently be able to add or drop particular channels.

As to claim 9, light is reflected and transmitted in multiple vectors.

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As to claim 10, multiple channels are used.

As to claim 11, flat-top frequency response is optimized.

As to claim 13, channel isolation and suppressed crosstalk is achieved.

As to claim 14, optical spacers are used to construct the WDM interleaver.

However, Xu fails to explicitly disclose the use of a “fused fiber” interleaver, but does disclose that interleavers are conventionally made by fusing together two optical fibers (figure 2 and description).

Laming teaches a channel add/drop multiplexer using a fused optical fiber coupler to extract (drop) a specified wavelength.

Since Xu and Laming are both from the same field of endeavor, the Laming reference would have been recognized in the pertinent art of Xu.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the fused optical fibers of Laming as the interleavers of Xu for the motivation of reducing cost, bulk and to lower insertion losses.

10. Claims 15-21, and 23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Xu as applied to claims above, and further in view of applicant’s disclosure of prior art.

Xu discloses a thin film based add/drop optical module using interleavers, but fails to explicitly disclose the method of Coarse Wavelength Division Multiplexing (CWDM).

Applicant discloses in the background of the invention that WDM, DWDM and CWDM are commonly used in the art of multiplexing in order to increase bandwidth using multiple interleavers.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to configure the WDM of Xu to allow for use with a CWDM signal disclosed by applicant as a matter of obvious design choice based on its intended use and to increase bandwidth for the module of Xu.

***Conclusion***

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric Wong whose telephone number is 571-272-2363. The examiner can normally be reached on Monday through Friday, 830AM - 430PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font can be reached on 571-272-2415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



EW



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